Terms of Reference for Engagement of Consultant/Expert
For Assessing Water & Soil Quality for Arsenic and other Contaminants
Under the project
“Women and Men Enhanced their Income while Producing Economically and Environmental Friendly Basmati Rice in Pakistan”

Project Background

The natural occurrence of arsenic, mercury and fluoride in ground water & soil constitutes a setback in the provision of safe drinking/irrigated water to millions of citizens in Asia. At least 60 million people live in arsenic affected regions and many drinks arsenic contaminated water on daily basis. These ingestion is often estimated from water intake alone. Although it is increasingly apparent that an additional loading arises from arsenic in food, specially from paddy rice grown with contaminated irrigation water. Soil thus irrigated may accumulate arsenic to phytotoxic level, creating a problem of latent affects on crop yields. Most investigating has focused on the arsenic risk from drinking water, but there is now widening interest in whether this poison can also be passed on in rice, through irrigated fields. Human exposure to arsenic (As) via rice consumption is of increasing concern. Rice is one of the most important food crops around the world and feeds over half of the global population.

This project “Women and Men Enhanced their Income while Producing Economically and Environmental Friendly Basmati Rice in Pakistan” is planned to be implemented in 10 villages of District Sheikh Pura, Punjab Pakistan with Doaba Foundation with financial support of OXFAM, SIDA and AX food, the project aims to improve the social, economic and environmental conditions of the rice value chain for rice growers and workers in 10 villages of Punjab, Pakistan.

Major subjected activities of the project include the project will work on the following interventions:

- Establish 10 growers’ organizations (GO) for community engagement on the actions at the village level as well as for coordination with the government and private sector actors. In the GOs women participation in the executive committees will be assured as well as a fair representation of women and representatives of poorer households in the GO itself.
- Develop together with rice communities and stakeholders involved, improved rice farming practices addressing environmental, social and economic concerns.
- Develop quality standards for rice and to create and strengthen the linkages between growers, market actors (private sector) and government departments through a multi stakeholder platform for action.
- Engage rice millers in the development of Corporate Social Responsibility (CSR)/sustainability policies so they work directly with farmers on sustainability practices; safeguard decent working conditions; and fair pricing based on quality.
- Improve the labor conditions of (seasonal) workers in the rice value chain with specific attention for child labor, women workers (anti-discrimination, anti-harassment) and health and safety issues.
Regarding the development of more sustainable rice farming practices, the project will bring together various experiences: growers, research institutes, government extension services, private sector actors, and build upon international rice sustainability guidelines like the recently developed Sustainable Rice Platform (SRP) standard\(^1\). The small holder growers, particularly women, will in this way be supported to:

1. Decrease costs by rationalizing the use of external inputs;
2. Maintain or increase yield level (kg/acre);
3. Produce higher quality grains;
4. Improve their position to negotiate on sale of the rice produced.

**Objective of the Project:**

Empowered and organized women and men rice growers and workers in Punjab, Pakistan achieving better prices for their sustainably produced rice, earning a higher income, and lobbying for improved working conditions.

**Result 1:** 10 Grower Organizations established and functioning.

**Result 2:** 900 rice producing farmers more knowledge about sustainable rice production practices

**Result 3:** 900 rice producing farmers more knowledge about standardized rice paddy quality estimation

**Result 4:** Improved awareness of working conditions of (temporary) workers in the rice production in the project area.

**Scope of this Research (water & soil quality assessment):**

The results of this research can of careful implementation of the irrigation system modernization taking ground water quality in due consideration. This research regarding the assessment of incidence of contamination in rice, water & soil in the target area. It is proposed that if an endemic situation is established through the research; identification of potential measures to be taken with various stakeholders will be then taken up in an eventual next phase of the project.

- What are rice testing, inspection and certification requirements for Arsenic, mercury, fluoride, other heavy metals, GMOs, Pesticide residue
- Medical issue assessment & protection measures along with symptoms collections
- Mapping of Quality Assurance Infrastructure in Pakistan
- What are the policy level recommendations?

**Methodology:**

Project team will share result of desk review and jointly will finalize methodology with consultant for water and soil testing, inspection and certification.

**Rice Sampling:**

Consultant will use internationally recognized protocols/ standards for sample collection. All sample will be collected randomly from grower’s stock from 20 villages (70%), wholesalers (10%), mills (10%) and from open markets (10%) to cover major varieties of rice. Similarly, for water Sampling; ground water samples will be collected from near rice fields and irrigation resources. However, consultant will do
mapping for quality assurance infrastructures and explore the requirement of laboratories. Project team will support for collection of water and soil sample from the field as per standard requirement of labs.

Key deliverables:
- Consultant will endorse the final results from the recognized authorities and will share in project Multi-stakeholder forum (MSP) in district Sheikhpura.
- Preparation & development of complete methodology of research and taking approval from Doaba Foundation and Oxfam
- Finalization of results with all relevant information related to the contaminations and it must be from internationally accredited institute.
- Development of detailed report of the research with key recommendations and getting approval from Doaba Foundation and Oxfam.
- Printing publishing of research Report of copies to handover to the Oxfam.
- Presentation of the report to the all stakeholders in the meetings and workshops of Multi-stakeholder platform.

Competencies
- Individual expert, firm, government department, institution or laboratory should be specialist in the field of chemical examination of water & soil testing regarding arsenic, mercury and fluoride contamination focusing on Rice Value Chain
- The report of the consultant/expert/institute should be internationally recognized and acceptable.
- Expertise on sample taking and record keeping
- Knowledge about the issue related to rice, water & soil contamination specially in rice sector.
- Expertise of coordination with other relevant stakeholders for getting secondary information about this issue.
- Knowledge of existing standards in the world regarding presence of these contaminations in the water and soil.

Required Qualification, Skills and Experience
- Graduation preferably related to agriculture, chemistry or related field.
- Previous experience related to conducting research & studies of water and soil examination analysis preferably related to Rice Value Chain.
- Experience of report development regarding research and studies.
- Ability to work in a multi-task and multi-deadline environment
- Excellent organizational and prioritization skills
- Ability to set goals and timelines and work on deadlines
- Knowledge of Gender issues and key players in the context of rice value chain.
- Be accountable, flexible and prepared to work under pressure
- Ability and willingness to work independently and with a team.
• Time management, presence of mind, ability to persuade.
• Knowledge of computer and software (word-processing, spreadsheets, presentations, etc)
• Fluency in English and Urdu (excellent speaking and writing skills)

**Time frame:**
The assignment is expected to start 1\textsuperscript{st} Jan 2018 and to be finalized by mid of February, 2018.

**Ownership of the material**

Any documents, reports or other material, graphic, videos or otherwise, prepared by the consultant/specialist for Oxfam other the contract shall belong to and remain the property of the Oxfam. The consultant may retain a copy of such documents and software.

The following criteria will be used in the evaluation of the received offers.

• Competencies of the applicants
• Past relevant experience of the applicants
• Demonstrated ability to facilitate complex and sensitive discussions and group work
• Outstanding teamwork, communication and interpersonal skills
• Encourages and contributes creative solutions to address challenging situations
• Excellent analytical and drafting skills

**PAYMENT SCHEDULE**

Payment schedule and terms will be defined and agreed at the time of agreement.

Those interested should submit the application/CV along with technical and financial proposal with complete methodology no later than ________ till ________, through surface mail.